

# THE STRAWBERRY IN THE HOME GARDEN

HAROLD E. THOMAS<sup>1</sup>

The strawberry can usually be grown successfully in most areas of California if given proper care and treatment. Commercial production, however, has decreased steadily since the removal of Japanese growers; and if consumers are to have the usual supply of the berries, much of the production must come from home gardens.

The strawberry plant is sensitive to many influences and at times fails even though well cared for. Diseases and insect pests may cause failure; at other times soils seem responsible. Strawberries often do poorly in soils previously cropped to garden truck for a long period. Varieties suitable to the area must be carefully selected, and only disease-free stock planted. By giving thought to culture and care, the home gardener may secure a bed that will furnish him quantities of this luscious first fruit of spring.

## Strawberry Types

Two types of strawberry, distinguished by their fruiting habit, and referred to as everbearing and noneverbearing, are commonly used in the home garden. The everbearer produces the first season, or when set in the spring produces in the summer and fall of that same year, whereas the noneverbearer has only a few berries in the spring when set out and waits until the spring of the following year for a major crop. The fact that the everbearers produce the first year has made them popular in home gardens. Over a period of two or three years, however, the total production from a noneverbearer planting is believed to be greater than that from an everbearer--a point that the prospective grower must consider in selecting a type to use. In general, the noneverbearers show more vigor and longevity and will last longer than the others.

## Types of Culture

Since nearly all strawberries in California must be irrigated, culture will depend partly upon the type of irrigation employed. In commercial production an alternation of raised beds and ditches is commonly used (fig. 1). For any extensive planting this is the most feasible type of culture. The ground is usually leveled in the direction that the ditch is to run, to allow even distribution of the water throughout

the ditch and equal penetration to the plants growing on the bed. When irrigation is necessary, the ditch is filled with water from a flume or hose. Once established, the system involves very little labor or expense. The initial cost of leveling and ditching, however, is comparatively high.

The raised bed has an added advantage: its surface remains relatively dry, and so there is less of the fruit rot that would be apt to occur in moist climates if the surface was kept wet by overhead irrigation. In the drier climates, however, or in light or quick-drying soils, overhead irrigation may be employed without too serious loss from the rotting of fruit in contact with moist soil.

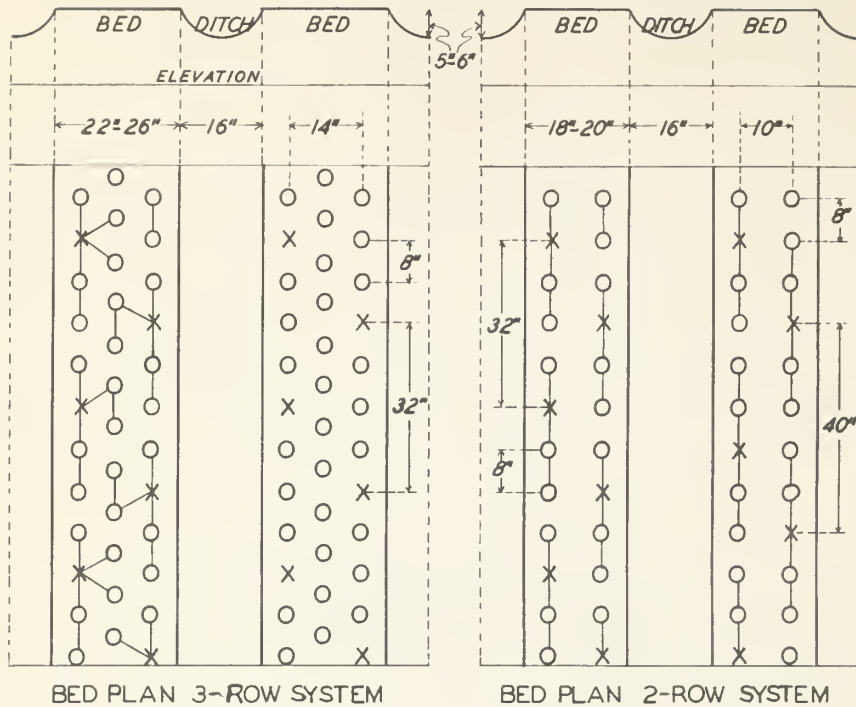
The width of the raised bed can be varied somewhat in different soil types, according to the ease with which irrigation water penetrates to the center of the bed. In tight soils with poor lateral penetration the bed should be narrowed to accommodate one or two rows of plants and might vary in width from 12 to 20 inches. In soils of good lateral penetration the bed may be widened to accommodate three rows of plants and extend to 24 or more inches on the top. The width of the ditch at the top should be 16 to 18 inches and the depth 5 to 6 inches (fig. 1, p. 2).

Although the raised-bed system of culture is the most practical where there is a fair number of plants, other systems may be followed to advantage by growers desiring only a few plants. In fact, any method whereby adequate moisture can be supplied is usually sufficient for growing strawberries, although not always desirable. Flat culture (fig. 2, p. 2), in which no ridges or ditches are used and the plants are set level with the original contour of the soil, may be successful for small beds of strawberries. Normally, with flat culture, the grower uses overhead irrigation, or a modification of sprinkling and sheet irrigation in which the water is allowed to run from the hose with the force broken by burlap or other sacking. As pointed out above, however, contact of the fruit with moistened soil may result in excessive rot. Soils that bake hard after irrigation are often unsatisfactory for this type of culture. Steep slopes do not lend themselves to flat-culture overhead irrigation because of excessive runoff of the water applied.

Very small ridges or mounds are unsuitable: they tend to dry, so that roots obtain insufficient moisture to prevent desiccation of the young

<sup>1</sup>Assistant Professor of Plant Pathology and Associate Plant Pathologist in the Experiment Station.

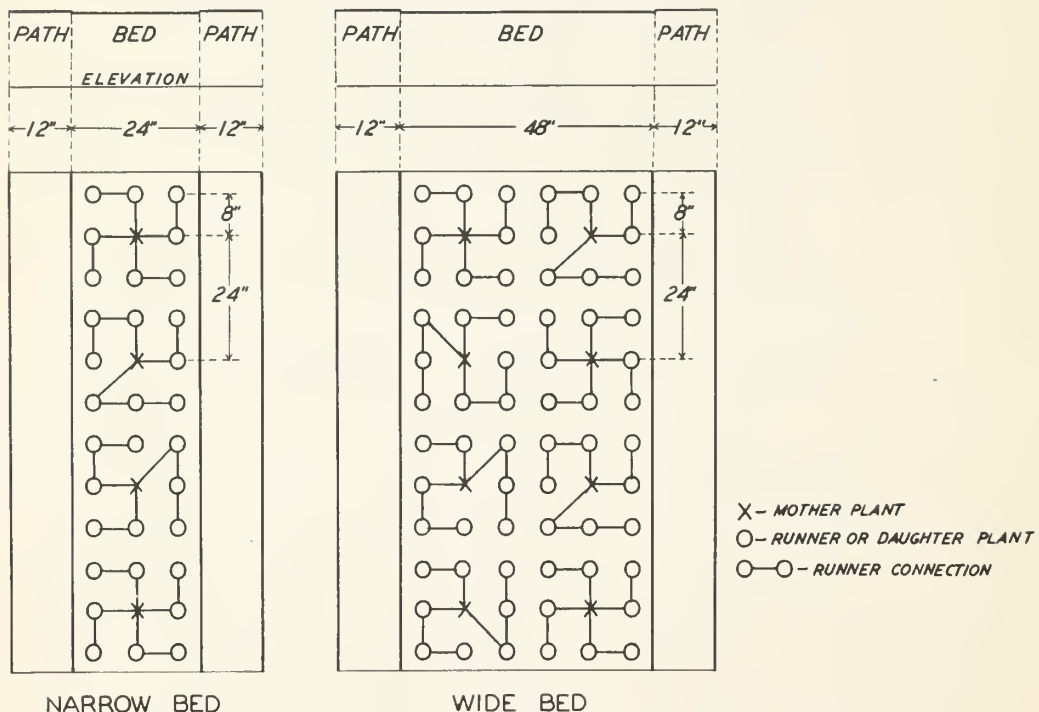
## PLAN FOR RAISED-BED CULTURE



X - MOTHER PLANT  
 O - RUNNER OR DAUGHTER PLANT  
 O-O - RUNNER CONNECTION

Fig. 1.--Suggested plan for raised-bed strawberry culture, showing spacing of the mother and runner plants to form a 3-row and a 2-row system of planting. The bed elevation is indicated at the top. The mother plants in the 3-row system are set 32 inches apart in the row, and the rows 14 inches apart. In the 2-row system, 32- and 40-inch spacings of mother plants are shown.

## PLAN FOR FLAT-BED CULTURE



X - MOTHER PLANT  
 O - RUNNER OR DAUGHTER PLANT  
 O-O - RUNNER CONNECTION

Fig. 2.--Suggested plan for flat-bed strawberry culture, showing spacing of mother plants and arrangement of runner plants. Three and four runners per mother plant are indicated, and some early forcing of mother plants may be necessary to obtain this number. Various methods of runner arrangement are shown. The wide bed takes up less room; and usually, with this spacing, all berries may be picked from the paths.

plant. If small ridges are necessary to guide the irrigation water or prevent runoff, place them between the rows of plants instead of setting the plants upon the ridges.

### Drainage

In the rainy season, adequate drainage to prevent excessive accumulation of water in the surface foot of soil is highly important. If ditches are used for irrigation, the ends should be opened to allow the excess water to drain off during the wet season.

### Soil Types

For ease of culture and handling, the lighter types of soil are the most desirable in strawberry growing. Soils of heavier texture produce equally well, however, and are satisfactory except for being more difficult to manage. Soils containing too much alkali or salt should be avoided unless thoroughly leached. Soils naturally of high organic content or those made so by the addition of decaying vegetative material seem well adapted to strawberries. Low, swampy or soggy areas should not be selected; on them the plants usually make poor growth, the leaves burn, and the crop is light. Strawberries often fail in soils previously devoted to garden truck for long periods; although the reason for this failure is not apparent. If available, new soils or at least soils not intensively cropped to gardens should be selected.

### Time of Planting

Spring is the most favorable season for planting strawberries, though fall is a possible time. The spring plants should not be set too early and will usually do better if the gardener waits till the ground is warm and soil moisture has been reduced. Strawberries should not be planted when the soil is so wet that it tends to cake or puddle when worked. Wait until it remains loose and crumbly after handling.

In southern California the planting season extends from February to April, most of the work being done in March. Along the central-coast area plants are set usually in March or April, but can be set in May if well tended and irrigated. Planting in April or later is recommended in this area to avoid virus-disease infection, which spreads most during winter and early spring. In the central valleys strawberries are sometimes set as early as January, but the main planting season extends through February and March.

Noneverbearing varieties set after the first of January normally produce only a very light crop early in their growth period and follow immediately with the production of runners. They then yield no more berries during the year except that sometimes, along the coast, there is a light, late-fall crop. In contrast, however, if non-everbearing plants are set in the fall before the middle of December a fair crop is usually obtained

the next spring, and there is less tendency to produce runners after the spring crop. Fall planting, however, is not advised along the coast and is a questionable practice inland because of the danger of virus diseases, which normally spread most during the winter and early spring.

Since everbearing varieties produce during the summer and fall after a spring setting, there is little reason for planting them in the fall. Only spring planting is recommended.

### Spacing of Mother and Runner Plants

The distance at which mother plants should be spaced when set will depend partly upon their ability to produce runner plants and partly upon the type of culture employed. The runner plants bear just as satisfactorily as the mother plant and when used to the full extent materially reduce the number of mother plants needed.

For flat culture, the mother plants can be set 2 to 3 feet apart in each direction. The intervening space is filled with the runner plants, which form on the runners or stolons and are set 6 to 8 inches apart. For most varieties 7 to 8 inches is a good allowance. Small plant varieties can be spaced closer, but seldom closer than 6 inches. Crowding causes more fruit rot, smaller berries, and normally less total production. If walks are desired through the planting for convenience in picking the fruit, the distance between the rows of mother plants in one direction can be extended 1 or 1½ feet.

In raised-bed culture in a 2- or 3-row system, the mother plants are normally set 2½ to 3 feet apart in a row on both sides of the bed and staggered. The intervening spaces are then filled with runner plants as they form, to make either a double- or triple-row arrangement (fig. 1).

### How to Plant

Before planting, trim off all the leaves except the very youngest one, and cut the roots back to a length of about 4 inches. If the plants are dry or the roots are at all withered, it is good practice to soak the entire plant in water for a few minutes before setting it. Strawberry plants should never be exposed to the sun or to drying for any appreciable length of time; the roots, being small and tender, are easily injured.

The trowel is useful for planting strawberries. A hole is dug to the depth to which the roots will be set, and the soil loosened and pulverized. The roots should be spread out in a fan shape against the side of the hole. Then, to exclude air and prevent drying, the soil is packed in firmly around the roots with the head of the trowel or pressed with the thumb and fingers. A little soil brushed over the firmed surface will prevent baking. When setting is completed, the crown of the plant should be even with the surface of the ground, with no roots exposed. (See fig. 3, p. 5.)

If many plants must be set, a quicker method is to use a narrow shovel or spade in place of the



trowel. The tool is inserted in the soil to a depth of about 5 inches and pulled forward to make a V-shaped opening. The roots are placed fan-shape in the V and held with the hand at the proper depth; meanwhile the shovel is removed, reinserted 1 inch ahead of its original position, and manipulated to press soil against the roots. The heel of the operator's shoe is then used to firm the soil still more.

If the soil is at all dry at planting time or the weather is warm, the plants should be irrigated immediately. Irrigation also promotes closer contact between soil and roots. The plants must not dry or wilt while becoming established. Neither should the soil become waterlogged.

#### Removal of Flower and Fruit Stems

If the plants are set early or start growth rapidly when set out, there is usually no harm in allowing the fruit clusters, which generally appear after the plants are set, to remain and form fruit. If, however, the plants are set late or fail to maintain vigorous growth and development, the flower buds should be removed until good vigor is assured. If the fruit is allowed to mature before the plant becomes well established, there will be a serious drain on the plant's vitality and usually insufficient runner development with which to fill out the bed.

#### Setting Runners

In early summer, after the mother plant becomes well rooted, runners or stolons develop from the crown; and, at intervals varying from a few inches to a foot or more, young plants are formed. These are called runner plants and are the normal means of plant increase in the strawberry. They are used to fill in the space between mother plants on the bed (figs. 1 and 2) and will produce fruit the following year, often as abundantly as the mother plant.

If the surface soil is moist and loose, the runner plant will strike root immediately after forming. If, on the other hand, the surface is dry or hard, roots do not start, but remain rudimentary until conditions for growth become better. This fact may be utilized by the strawberry grower. If he keeps the surface soil on the dry side of optimum for 2-week intervals at the time of runner formation, the runner plants will not root. He can then, at semi-monthly intervals, wet the soil thoroughly by whatever irrigation method he is following and set the plants in the desired permanent position as soon as the ground dries enough to be worked satisfactorily. A good method of setting runner plants is to turn the soil with a trowel at the point where the plant will be set. This brings up moist earth, into which the plant while still attached to the runner can be pressed with the thumb and forefinger to a depth sufficient to hold it in position. As added insurance that the runner will be held in place, a clod may be

laid upon it close to the plant. Plants thus set strike root immediately and continue growth. The runners also grow and produce more plants; and the procedure as outlined can be repeated every 2 weeks until the strawberry bed is completely filled. After this all excess runner plants that form should be periodically removed to allow maximum development of the plants that are set. The runners or stolons connecting the mother plant with the runner plants are left intact and should not be cut. They die naturally during the winter and can be removed in the spring cleanup of the bed.

#### Irrigation

The climate and the type of soil will largely determine the frequency of irrigation. In the hot interior valleys during the first season, an irrigation every 7 to 10 days from planting time may be necessary in the lighter soils. Along the coast once a month may be adequate the first year. Sufficient water should be used to prevent wilting and to keep the plants in moderately vigorous growth. Luxuriant growth is not necessary. Plants deficient in water often have a characteristic blue cast.

During the second and succeeding years while fruit is being produced, frequent irrigations are necessary to maintain maximum-sized fruit and adequate plant growth. In commercial production an irrigation is given normally after each picking. This may mean irrigating every 2 or 3 days in a hot climate or once a week in the cooler sections of the state.

#### Cultivation and Care

Strawberries should not be cultivated deeply. The roots grow close to the surface, and deep cultivation destroys them. Sufficient cultivation to kill the weeds and form a shallow soil mulch is adequate. After the foliage covers the surface of the bed, no working of the soil is required, and only removal of weeds is essential. Where ditches are used for irrigation, refurrowing once or twice a year may be necessary; but the ditches are not cultivated, except for removal of weeds.

In the interior valleys and to a less extent on the coast, runners sometimes form in abundance after the spring crop has been harvested. They should be cut off and removed at frequent intervals so that they do not mat on the bed or sap the strength of the bearing plants.

Commercial growers along the central coast have for many years cut the tops off the plants close to the ground in late January or early February. They claim an improvement in the spring crop--larger berries, less small and trashy fruit. This practice also removes any leaves that are harboring insects or fungus diseases. For maximum benefit, the leaves and rubbish removed should be burned immediately. As an added cleanup measure a 10 per cent lime-sulfur solution spray has at times been applied to the bed after removal of the tops.

## Fertilization

Although strawberries respond to fertilization in most soils, the need for it is usually greater in the lighter types than in soils of heavier texture. Of the three elements (nitrogen, phosphorus, and potassium) contained in all complete fertilizers, nitrogen seems to be the one most needed by the strawberry; in some soils it is apparently the only element to which the plant responds. Any fertilizer selected, therefore, should be high in percentage of nitrogen. For maximum response from a limited expenditure, commercial growers often use only the nitrogen simples such as sulfate of ammonia, ammonium nitrate, nitrate of soda, and uramon.

Pale-colored foliage indicates a need for nitrogen; dark-green foliage, an adequate supply. Excessive nitrogenous fertilization causes too much vegetative development and may reduce total production instead of increasing it. In addition, the skin and flesh of the fruit are softened and thus predisposed to decay. The amount considered an excessive application will vary with the type and fertility of the soil. The productive soils and those of heavy texture may not require any fertilization. The light and the sandy soils, especially in the coastal areas where continuous production throughout the summer and fall is possible, may give an increasing response upward to an amount equal to 1,000 pounds per acre of a 20 per cent nitrogen fertilizer. Such an application should be divided into several portions, and not more than 250 to 350 pounds per acre

should be applied at one time. When only a spring crop is obtained, a single application 2 months before harvest seems adequate. In terms of a small garden, 250 pounds per acre would amount to slightly more than  $\frac{1}{2}$  pound to 100 square feet of bed. If fertilizer of less than a 20 per cent nitrogen content is used, the rate of application can be correspondingly increased.

The grower should be guided in his use of fertilizer by the luxuriance of plant growth, remembering that excessive vegetative growth is undesirable for fruit production and only good moderate growth is necessary.

The commercial fertilizers may be applied before growth starts in the early spring, by sowing between the plants on top of the bed and lightly working the soil with a cultivating tool. The fertilizer must not fall in the crown of the plant and cause a burn. Later applications are not so easily made by this method, because of the development of foliage. Nitrogen fertilizers, being soluble in water, may be applied in solution to the ditch just before irrigation, or poured on the ground around the plants and thoroughly watered in by overhead irrigation. Other fertilizers may be worked in along the edge of the ditches.

Manure, if well rotted, may be used on strawberries. If unrotted, however, it should never come close to the plant roots, because of the burn that is apt to result. Likewise strawberries should never be planted in soil that has been fertilized with unrotted manure less than several months before planting.



Fig. 3.--Left, strawberry plant as dug, before any trimming; center, leaves cut off ready for packing into shipping box; right, roots and top trimmed ready for planting. The dotted line indicates the level at which the soil must be when the plant is set: deeper planting may cause the crown to rot; shallow setting exposes and dries the roots. (California Agr. Ext. Cir. 113.)



## Harvesting

Being so perishable, the strawberry must be picked often, both for the good of the succeeding crop and the quality of the picked fruit. If the fruit is left on the plant until overmature, decay begins and may even involve the immature fruit. Removal of all decayed berries at each picking is very helpful in lowering the incidence of rot. This precaution is especially important after rain or a prolonged wet period.

The rate of maturity of the fruit largely depends upon the prevailing temperature. In the interior valleys during hot weather, picking may be desirable every other day, whereas on the coast in cool weather every 5 or 6 days may be adequate.

The berry has reached maturity and is ready for picking when it is completely colored on all sides; at this stage it has a high dessert quality. As it becomes overripe, the quality deteriorates.

## Number of Plants to Set for Family Use

The home gardener often asks how many strawberry plants are needed to supply his household. Obviously, many factors govern the answer to this question, chief of which may be the appetite of the family. A good criterion is the amount of fruit that can be expected from an individual plant; but the variation in production, depending on the spacing of the plant and the care it receives, is so great that any estimate must be very rough.

A single plant spaced as in figure 1 may be expected to yield  $\frac{1}{2}$  to 2 pint baskets a year. In the interior valleys, where only a spring crop is harvested, the production would approximate the lower figure. On the coast, where continuous production is possible, the yield may surpass the higher estimate. Accepting these bases for calculation, 12 mother plants, each producing 5 runner plants, would give a total of 72 plants. Then, with a yield of  $\frac{1}{2}$  basket per plant, production would total 36 baskets or 3 crates; with a 2-basket yield, 144 baskets or 12 crates.

## Choice of Variety and Planting Stock

No variety now being used is entirely satisfactory commercially for any given area of California. The home gardener has some latitude in his selection; to him, firmness and shipping quality are not highly important. The present era may prove to be one of transition in the use of varieties, since new and untested ones are being introduced. Before ordering a variety any grower should determine, if possible, whether it is succeeding in his vicinity.

The quality of the planting stock is always exceedingly important. Whenever possible, plants certified as free of virus diseases should be used. Because of these diseases it is unsafe to use locally grown plants in the central-coast area. The strawberry grower in this district is

much more likely to succeed if he uses plants from elsewhere.

All the varieties commonly used have botanically perfect flowers; and cross-pollination is not necessary. A variety that lacks functional pollen will not set fruit unless interplanted with some pollen-bearing variety.

There are no super varieties of strawberry, radio and other advertising notwithstanding. The public should not be fooled into paying exorbitant prices for overrated or highly advertised plants.

## Noneverbearing Varieties

In general, varieties serviceable in other parts of the United States are not adapted to California. The Klondike, a noneverbearing variety widely grown in the southern states and in southern California, is an exception: it is used extensively in commercial production; and, until sufficient tests are made with other varieties to prove their superiority, the home gardener had probably better continue with it for any area in the southern part of the state. The Dorsett variety is reported to have succeeded well in some localities there.

For northern and central California the Marshall type varieties have long been the standard in commercial production. If stock free from virus disease can be purchased, these varieties are suitable for home gardens. They produce fruit of a high dessert quality and thrive under a variety of soil and climatic conditions. The differences between the varieties of the Marshall type are so slight that for most purposes all may be considered as one. The names under which they are sold include Marshall, Banner, Oregon, New Oregon, and Oregon Plum.

Other varieties having some merit in parts of central and northern California include the Dorsett, Fairmore, Narcissa, and Redheart. The Dorsett is variable in reaction, sometimes doing very poorly, at other times thriving and producing good crops. Having a dense crown, the plant is subject to mealybug and aphid attack; and ants can easily build mounds of earth in the crown to harbor the black root aphid. The fruit has fine flavor and color. The skin is soft; the keeping quality only medium. The variety is susceptible to virus diseases. It seems to do best along the coast, but poorly in the interior valleys.

Fairmore is very early, and in limited trials on the coast has shown some promise for home gardens. The berry is of medium good size at the beginning of the season, but tends to become small at the end. It is deep red, very firm, and of good quality. Fairmore produces well, has a succession of crops, and is suggested for trial.

The Narcissa and Redheart, though used successfully by some commercial growers in the central-coast area, behave erratically and do not always succeed. Both have high dessert quality. The home gardener could consider them only as a third choice in selecting a general variety.

### Everbearing Varieties

Everbearing varieties produce fruit during the summer and fall of the year they are set. They are therefore popular in home gardens, although sometimes less successfully grown than the non-everbearing types. The Rockhill (Rockhill 26 or Wayzata), the most favored, has good flavor, appearance, and size and normally produces well. Under most California climatic conditions the plants do not produce runners and must be propagated by division of the crown. This method of increase is slow and justifies a higher price than is paid for runner-producing plants. Rockhill needs exposure to appreciable winter cold for best spring growth and in regions with warm winter temperatures may do very poorly the second year. Some growers prefer to dig the plants up and give them a month of refrigerated cold storage before replanting in the spring each year. For maximum production, heavy fertilization is necessary. The blossoms produced in the spring immediately after setting should be removed and kept off until plant vigor is apparent. Rockhill is susceptible to the virus disease yellows and when affected does poorly. The recent heavy demand for it unfortunately has caused some yellows-affected stock to reach the retail trade.

The Gem everbearing variety is so erratic in growth that recommendations for its use are hazardous. Some growers report fine results; others complete failure. The berry is very acid, and the quality and size are only medium.

The Mastodon and Champion are other everbearing varieties occasionally chosen by home gardeners. The latter is used somewhat in southern California.

### Diseases

The virus diseases are the most serious of the troubles affecting the strawberry. Once the plant becomes infected, no control is possible. The result is a gradual decline and degeneration. The symptoms differ with the variety; but there are usually dwarfed leaves, shortened petioles, and general stunting, often with yellowing of the leaf margins. Some cupping and distortion of the leaf blades takes place; and in severe cases the crop is seriously reduced. Diseased plants should be removed from the bed as soon as they are recognized, and the space filled later with healthy runner plants. It is of utmost importance that the stock planted be free of these diseases; certified stock, when available, is recommended. If disease-free plants are set after the middle of April in order to escape the early spring infection and are given good care, they have the best chance to succeed and to escape serious virus trouble. Since aphids are supposedly the carriers of the virus diseases, control of this insect should help to reduce the amount of infection. One of the most serious virus diseases affecting strawberries is yellows, or xanthosis, shown in figure 4.

Verticillium wilt, characterized by withering

and browning of the outer leaves and at times by death of the plant, often occurs in strawberries grown on land previously used for susceptible vegetables such as tomatoes and potatoes. Obviously, the home gardener should avoid areas that have been cropped to vegetables for long periods.

Powdery mildew, often a serious strawberry trouble, is manifested by a rolling inward of the leaves, by a bronzing and drying of the exposed portions, and at times by a powdery growth on the succulent foliage and the fruit. Dusting lightly with sulfur is the most effective means of control; but this chemical must be used with caution in hot, dry climates if sulfur burn is to be avoided.

Leaf spot, although often found in strawberry plantings, is seldom serious enough to warrant



Fig. 4.--Banner strawberry showing typical yellows, or xanthosis, symptoms, a serious virus disease that is spread by aphids. Note the small, wrinkled, yellow-margined leaves. The use of disease-free stock and isolation of the plantings are the best means of control. (From the Journal of Agricultural Research vol. 35, no. 12.)

spraying. Should treatment become necessary, a 4-4-50 bordeaux mixture spray is effective.

Black root, characterized by blackening of the cortex of the root and dying of a portion of the root system, results in poor growth and de-



vitalized plants and is often encountered in strawberries growing in old garden soil. As already mentioned, this type of soil is unsatisfactory for strawberries; where possible a new bed should be started with clean plants in some portion of the garden not previously cropped to vegetables.

Fruit rots, principally gray-mold rot, are serious in strawberries after a rain or damp weather. Removal of decaying berries and avoiding unnecessary wetting of the soil surface are recommended for control.

### Insect Pests

Red spider, or two-spotted mite, is among the most serious enemies of the strawberry and commonly attacks the plants in the spring at about the time the crop is starting to ripen. Graying of the foliage, a lack of vigorous succulent growth, and development of web on the surface of the leaves are signs of this pest. Where possible, syringing daily with a fine spray from the garden hose for 7 to 10 days, together with extra irrigation and nitrogen fertilization, will usually ward off any serious attack. A spray of light summer oil may be applied where daily syringing is not possible. Do not use the oil spray if sulfur has been applied.

The black root aphid normally seen in the crown of the plant is often a pest of strawberries in the home garden. Ants tend the aphids, protect them by building mounds of soil in the crown, and in turn eat the honeydew that the

aphid secretes. Control of the ants, washing away the soil mounds, and saturating the crown with a nicotine sulfate spray such as Black Leaf 40 will usually control the aphids, though repeated sprayings may be necessary.

In some seasons the light-colored leaf aphid develops high populations in early spring that result in "smutting" of the foliage. Nicotine sulfate spray, used alone or along with the summer-oil spray for red spider, is effective against this pest. Control is also desirable because this aphid probably spreads the virus diseases.

The leaf beetle causes small, round or elongated holes to appear in leaves, and the larvae feed on the roots from April to June. Affected plants are seriously injured and often killed. No control measure is very effective, and destruction of all plants after harvesting of the spring crop is recommended for home gardens. A new bed may be set the following season with a fair chance that the pest will not become serious.

Mealybug is sometimes a pest on strawberries in the home garden and is usually associated with ants. Control of the ants and treatment with a summer-oil spray as for red spider are recommended.

Slugs and snails are often troublesome pests. The commercial baits containing metaldehyde can be used, but should be applied before harvest or between crops to eliminate the danger of poisoning the fruit.

Other diseases, pests, and troubles may occur in strawberry plantings, but are seldom serious enough to limit production.